REMARKS

This response is submitted in reply to the Office Action mailed February 21, 2007. Claims 1-22 presently stand rejected. Claims 1, 10 and 17 are amended and claim 2 is canceled without prejudice. New claims 23-25 have been added. Claims 1 and 3-25 remain pending in the application. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over various combinations of US Patent No. 5,862,314 to Jeddeloh ("*Jeddeloh*"), US Patent No. 6,189,111 to Alexander et al. ("*Alexander*"), US Publication No. 2003/0154392A1 to Lewis ("*Lewis*"), US Patent No. 5,592,616A to Finch et al. ("*Finch*"), US Publication 2003/0177129A1 to Bond et al ("*Bond*") and Wikipedia. In particular, claims 1-4, 8-12 and 16-18 are rejected as being unpatentable over *Jeddeloh* in view of *Alexander*; claims 5, 6, 14 and 20 are rejected over *Jeddeloh* in view of *Alexander* in further view of *Lewis*; claim 7 is rejected over *Jeddeloh* in view of *Alexander* in further view of *Finch*; claims 13 and 19 are rejected over *Jeddeloh* in view of *Alexander* in further view of *Bond*; and claims 15 and 21 are rejected over *Jeddeloh*, *Alexander*, *Lewis* and Wikipedia. Finally, claim 22 is rejected over *Jeddeloh* in view of *Alexander* in further view of Wikipedia.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be

considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03.

Amended independent claim 1 now recites in pertinent part, "the system software component being a portion of a system software loaded in memory and **including instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into the OS runtime of the computer system.**"

In the rejection of claim 2 in the Office Action mailed February 21, 2007, the Office Action acknowledges that *Jeddeloh* fails to explicitly state the above limitation of a system software component including instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into the operating system runtime of the computer system (page 3, February 21, 2007 Office Action). The Office Action relies on *Alexander* to cure this deficiency, citing column 6, line 54-column 7, line 4 and column 3, lines 1-6. Applicants have reviewed the cited portions of *Alexander* and found that the former section describes table 30 of nodes 12(a) – 12(d), while the latter describes memory objects or other data structures. Applicants have not been able to find any reference to the above limitation. Thus, the references, as Applicants understand them, fail to disclose a system software component including instructions loaded from a firmware device during a pre-boot phase of the computer system that persists into the OS runtime of the computer system.

Amended independent claim 1 is nonobvious for at least a second independent reason. Amended independent claim 1 recites in pertinent part, "wherein the system software that includes the system software component **independently performs the**

detecting of the faulty portion of memory and the **relocating** of the system software component."

Applicants respectfully direct the Examiner to Figs. 1B-4 and accompanying text in the Applicants specification which describe the above limitations. Also note page 8, lines 1-9 which specifically describes the self-relocation performed by the system software.

In rejecting claim 1, the Office Action mailed February 21, 2007, acknowledges that *Jeddeloh* fails to explicitly state a system software component and relocating the system software component. The Examiner relies on *Alexander* as disclosing the limitation and cites column 6, line 54-column 7, line 4; column 8, lines 16-25. The Office Action characterizes critical information resources of *Alexander* as Applicants' claimed "system software component."

Applicants respectfully disagree. However, even if the Examiner were correct in the characterization above, which Applicants do not concede, *Alexander* would still fail to meet the above limitation because *Alexander* simply does not teach wherein **the system software that includes the system software component independently performs** the **detecting** of the faulty portion of memory **and** the **relocating** of the system software component.

Note that *Alexander* teaches that **one or more processing nodes 12a-12d** that include a computer including a CPU, memory and processor interface may forward **memory objects** or **"critical information resources"** of a failed node to a non-failed processing node (see col. 2, lines 60-65). *Alexander* **does not teach** that **system**

software that includes the "critical information resources" forwards the characterized "critical information resources" to a non-failed node.

Instead, *Alexander* teaches a different mechanism for what the Office Action has characterized as "relocating" of critical information resources. For example, *Alexander* teaches that **separate software** from that associated with any "critical information resources" is responsible for the recovery operations. Such software is called "active harvesting software" and *Alexander* teaches that such software must be kept separate from any failure (see col. 7, lines 12-20, "the software that controls active resource harvesting needs to reside in a region of memory that is protected by hardware from software faults elsewhere in the system..."). Thus, the active harvesting software itself or components thereof, <u>cannot</u> be located in a faulty memory portion, in order for the invention of Alexander to function.

Furthermore, even if the active harvesting software included the system software component, which Applicants do not concede, the active harvesting software cannot according to the teachings in *Alexander*, **independently** perform the **detecting** of the faulty memory portion **and relocating** of the system software component.

Alexander therefore cannot disclose, teach or suggest the recited combination which includes "relocating the system software component from the faulty portion of memory to a safe portion of memory, **wherein the system software that includes the system software component independently performs the detecting and relocating of the system software component.**"

Consequently, the combination of *Jeddeloh* and *Alexander* fail to teach or suggest all elements of claim 1, as required under M.P.E.P. § 2143.03. Independent

claims 10 and 17 include similar nonobvious elements as independent claim 1. Accordingly, Applicants request that the instant §103(a) rejections of claims 1, 10 and 17 be withdrawn.

The dependent claims are nonobvious over the prior art of record for at least the same reasons as discussed above in connection with their respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant §103 rejections of the dependent claims be withdrawn.

Claim Rejections – 35 U.S.C. § 101

Claims 10-16 stand rejected under *35 U.S.C. § 101*. The Office Action mailed February 21, 2007 objects to the machine-readable media limitation of claim 10 because Applicants' specification states that machine-readable medium may include propagated signals such as carrier waves. Accordingly, independent claim 10 has been amended to recite, "a tangible machine-readable storage medium including a plurality of instructions..." Applicants therefore respectfully request that the instant *35 U.S.C. § 101* rejections be withdrawn from independent claim 10 and its corresponding dependent claims.

New Claims

New independent claim 23 recites:

23.   A method, comprising:

setting a memory error detector including an error correction code (ECC) during a pre-boot phase of a computer system;

generating a system management interrupt (SMI) when the error detector detects a faulty portion of memory in the computer system during an operating system (OS) runtime, the faulty portion having stored a system software component in a System Management Random Access Memory (SMRAM) region of memory, the system software component including instructions loaded from a firmware device during a pre-boot phase of the computer system that persist into the OS runtime of the computer system; and

relocating the system software component from the faulty portion of memory to a safe portion of memory during a System Management Mode (SMM) of the computer system, the relocating the system software component including:

finding a safe portion of memory within the SMRAM;

moving the system software component to the safe portion of memory; and

updating a system software memory manager to indicate the system software component is located at the safe portion of memory.

Note that Figs. 2-4 of the Specification and accompanying text describe the method combination above.

Jeddeloh is directed to a system and method for remapping defective memory locations. *Alexander* is directed to resource harvesting in scalable fault tolerant, single system image clusters. *Finch* is directed to a method for performing efficient memory testing on large memory arrays using test code executed from cache memory. *Lewis* is directed to a secure system firmware using interrupt generation on attempts to modify shadow RAM attributes. *Bond* is directed to an extensible loader. Applicants submit

that none of the references disclose the above method combination of new claim 23. Dependent claims 24-25 have also been added. Applicants respectfully request consideration of claims 23-25.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative at (206) 292-8600 if the Examiner believes that an interview might be useful for any reason.
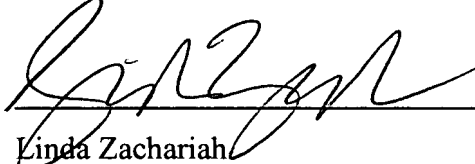
CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

Date: _May 21, 2007_

Linda Zachariah
Reg. No. 48,057
Phone: (206) 292-8600